## REMARKS

Reconsideration of the rejections set forth in the Office Action is respectfully requested. By this Amendment, claims 5, 14, 22, and 26-28 have been canceled without prejudice or disclaimer and claims 1, 3-4, 6, 7, 9, 10, 12, 13, 15, 16, 18, 20, and 21 have been amended. Currently, claims 1-4, 6-13, 15-22, and 23-25 are pending in this application.

Rejection under 35 USC 101

Claims 10-17 and 26-28 were rejected under 35 USC 101. Applicants have amended claim 10 to overcome the rejection of claims 10-17, and have canceled claims 26-28. Accordingly the Examiner is respectfully requested to withdraw the rejection under 35 USC 101.

Rejection of claims 1-28 under 35 USC 102 over Tang

Claims 1-28 were rejected under 35 USC 102 as anticipated by Tang et al. (U.S. Patent No. 6,839,348). This rejection is respectfully traversed in view of the amendments to the claims and the following arguments.

Multicast trees are commonly established to distribute information to multicast participants in an efficient manner. As noted in the background of the invention, there are several routing protocols that may be used to establish a multicast tree, two of which are Protocol Independent Multicast (PIM) and Distance Vector Multicast Routing Protocol (DVMRP). (See Specification at page 2, lines 4-6). Once the multicast tree has been established, information may be transmitted over the multicast tree. Since not every network device that is connected to the multicast tree may wish to participate in every multicast, or may not be authorized to participate in the multicast, a separate set of protocols have been developed to control membership in the multicast. One common protocol that is used to control membership in a multicast is Internet Group Management Protocol (IGMP). A router will store routing information to route multicast packets over the multicast tree to cause the multicast packets to reach those destinations on the network that have joined a particular multicast. Thus, when a node joins a multicast, it will send an IGMP JoinGroup message. This will cause routers on the network to install routing entries into their Routing Information Bases to allow packets to be forwarded on the new branch of the multicast tree to the newly joined node.

There are instances where it is necessary for a network management application to recreate a multicast tree to see how the tree has been created. Unfortunately, the information that the network management application needs to create the tree is the multicast routing information, since this is the information that actually shows how packets are forwarded on the tree by the nodes on the network. Since the multicast routing information that is stored in the multicast routing information base is protocol dependent, i.e. is created using PIM or DVMRP, a network management program configured to read one type of routing information can't recreate a multicast tree that was created using the other type of multicast routing protocol. Thus, for example, a management program configured to read PIM routing information could not trace a multicast tree implemented using DVMRP, or vise-versa.

Applicants determined that the standard Management Information Base (MIB) could be used to store protocol independent multicast information that could be accessed by a network management application to build a multicast tree representing the multicast. (Specification at page 7, line 27-Page 8, line 1). Applicants have amended claim 1 to recite a "method of producing a multicast tree by a network management application." (emphasis added). Claim 1 has further been amended to recite that routers on the network each include a MIB containing protocol independent multicast routing information. Additionally, claim 1 has been amended to recite that the network management application accesses the plurality of MIBs, retrieves protocol independent multicast routing information from the MIBs, and traces the retrieved protocol independent multicast routing information to form a representation of the multicast tree in the network management application.

Tang does not teach or suggest that MIBs should contain protocol independent multicast routing information, or that a network management application should access the MIBs, retrieve the protocol independent multicast routing information, and trace the information to form a representation of the multicast tree.

Storage of protocol independent multicast routing information in a MIB was previously addressed in connection with claim 5. Claim 5 has now been canceled and the features of claim 5 have been incorporated into claim 1. With respect to claim 5, the Examiner took the position that Tang taught these features citing several portions of Tang. Applicants have reviewed these sections of Tang and it appears that Tang does not use the MIBs to store multicast routing information.

In Tang, each Multicast Network Device (MND) that is coupled to a VLAN region is responsible for distributing multicast messages to a disjoint set of the VLAN domains defined within the region. (Col. 9, liens 42-46). The network administrator will assign one or more VLAN domain to each MND, and will communicate the assignment to the MNDs using SNMP or CLI (Col. 9, lines 46-59). The MNDs will then store the assignment in their MIB so that the MND may determine, at startup, the VLAN domain(s) for which it is responsible.

The Examiner has taken the position that the VLAN IDs and MVLAN IDs are used as protocol independent multicast routing information. Specifically, the Examiner has taken the position that since the VLAN or MVLAN identifiers are used to identify what VLAN or MVLAN domains the multicast messages are distributed to through the access port, that these fields are being used as protocol independent multicast routing information.

The VLAN and MVLAN identifiers are not routing information. They are identifiers that are used to identify domains within a particular VLAN region. Note, in this regard, that the MVLAN identifies multiple VLANS whereas a VLAN identifies a particular VLAN.

In Tang, the MNDs each have a multicast routing table 308 that is used to hold multicast route entries. (See e.g. Tang at Col. 15, lines 21-22 – "an MND creates a corresponding PIM shared-tree route entry in its multicast routing table"). When an MND receives a JoinGroup message, it will create a shared-tree route entry {*,G} in its multicast routing table 308. (Tang at col. 15, lines 19-22). Each entry in the multicast routing table 308 includes the source address 314, the multicast group destination address 316, the outgoing interface list (OIF) 318, and the incoming interface list 320. (See Tang Fig. 3)

As members joint the multicast, they will issue IGMP JoinGroup messages. An MND will receive the JoinGroup message and determine the interface on which the message was received. The VLAN ID of the interface on which the message was received will be added to the outgoing interface list 318 (Tang at col. 15, lines 35-50). Where the MND is not responsible for the VLAN IDs or MVLAN IDs, however, it will not add any entries to the outgoing interface list. (Tang at Col. 15, lines 61-64). Thus, the VLAN IDs are not multicast group routing information, but rather are used to identify interfaces on the MND. Additionally, the VLAN IDs and MVLAN IDs are stored in the multicast routing table 308 and thus, even if they could be considered to be multicast information, they are not stored in the MIB as claimed.

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Moreover, the fact that the network operator is able to administratively tell a particular MND which VLAN IDs and MVLAN IDs are available for use on the network, and store those values in the MIB, does not mean that the VLAN IDs or MVLAN IDs that are stored in the MIB represent a multicast tree. Specifically, the network management application could not access the MIB of the MND, retrieve the VLAN and MVLAN assignments, and use that information to recreate the tree. Thus, regardless of the Examiner's interpretation, Tang does not anticipate claim 1, which requires the network management application to be able to access the MIB, retrieve protocol independent multicast routing information from the MIB, and use the retrieved multicast routing information to form a representation of the multicast tree. Accessing the VLAN IDs stored in Tang's MIB would tell the network management application what VLANs and MVLANs were serviced by the MND, but would not allow the application to form a representation of any of the multicast trees passing through that particular MND.

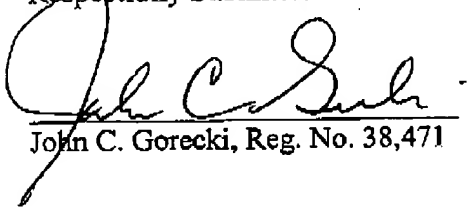
Applicants respectfully submit that the claims, as amended, are not anticipated by Tang. Accordingly, applicants respectfully request that the rejection under 35 USC 102 be withdrawn.

Conclusion

Applicants respectfully submit that the claims pending in this application are in condition for allowance and respectfully request an action to that effect. If the Examiner believes a telephone interview would further prosecution of this application, the Examiner is respectfully requested to contact the undersigned at the number indicated below.

If any fees are due in connection with this filing, the Commissioner is hereby authorized to charge payment of the fees associated with this communication or credit any overpayment to Deposit Account No. 502246 (Ref. NN-13774).

Respectfully Submitted



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